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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,626	07/07/2003	Michael S. Zarro	7162-98	7838
39207	7590	09/22/2004	EXAMINER	
SACCO & ASSOCIATES, PA P.O. BOX 30999 PALM BEACH GARDENS, FL 33420-0999			HO, TAN	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/614,626	Applicant(s) ZARRO ET AL.	
	Examiner Tan Ho	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-20 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/7/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cahill (US Patent 6,208,316).

Cahill discloses, in figures 8, 9, 10a, and 15, a waveguide 11, a frequency selective surface 10 disposed in the inner surface of the waveguide, wherein the frequency selective surface comprises a plurality of dielectric layers 15 or propagation mediums, a plurality of conductive rings 14 formed on the substrates. The patent to Cahill teaches that the dielectric substrate has a permittivity of 3.78, column 5, lines 14-19. The patent to Cahill differs from the claimed invention because it does not disclose the RF signal in the second propagation medium having a second wavelength which is at least twice as long as a physical distance between centers of adjacent ones of the frequency selective surface elements. However the specific wavelength of RF signal is considered an obvious matter of design choice depending the desired of frequency band in the antenna system. Regarding claim 6, the apertures or slots of the frequency selective surface elements are well known in the art and therefore they represent an obvious expedient, see column 6, lines 54-65.

Allowable Subject Matter

3. Claims 8-20 are allowed.
4. Claim 8 recites an antenna device comprising a first horn, at least a second horn positioned within the first horn, wherein the second horn comprises at least one FSS having a plurality of FSS elements coupled to at least one substrate defining a first propagation medium such that an RF signal having a first wavelength in the propagation medium can pass through the FSS, and wherein the FSS is coupled to a second propagation medium such that in the second propagation medium the RF signal has a second wave length which is twice as long as physical distance between centers of adjacent ones of the FSS elements.

Claims 16 and 18 recite a waveguide horn antenna and a method for improving performance in the horn antenna comprising a FSS having a substrate defining at least one wall of the horn, and the substrate having at least one of a permittivity and a permeability greater than about three.

None of the prior arts shows or suggests the horn antenna above.

5. The patents to Durham et al, Wu et al, Iamzeki et al, Lane et al, Withers, and Epis are cited as of interest showing the horn antenna and the FSS similar to that disclosed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Ho whose telephone number is (571) 272-1822. The examiner can normally be reached on M-F (8:00AM - 5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TAN HO
PRIMARY EXAMINER